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LABOR REQUIREMENTS FOR YARDING AND HAULING PULPWOOD

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LABOR REQUIREMENTS FOR YARDING AND HAULING PULPWOOD [1/]

A survey of an efficient job in Connecticut

by D. H. Archer

What is a reasonable efficiency for labor employed in yarding and hauling pulpwood under conditions found in Connecticut? That is one of the questions that woodland owners have been asking.

A study made in 1946 of an efficient pulpwood operation in Connecticut may help to answer this question. The work done on this particular job probably represents about the top efficiency that can be obtained by experienced men using reasonably good equipment.

The job involved the handling of 1,000 cords of aspen pulpwood that had been cut on the Housatonic State Forest in northwestern Connecticut. This aspen occurred in practically pure stands of 6- to 14-inch stems 35 to 50 feet high (fig. 1). The stands, ranging from 1 acre to ¼ acre in extent, arose from the ashes of charcoal pits that were burned 30 to 40 years ago. The stands now support an understory of tolerant hardwoods such as sugar maple and black and yellow birch.

Since all the aspen was to be removed, the operation was virtually a clear-cutting of small blocks, and very little swamping of skid roads was necessary. Some rocks were removed from truck roads; this was done at minimum expense with dynamite.

1/This study was carried out under a cooperative project in farm forestry research sponsored jointly by the Connecticut State Forestry Service, the Connecticut Agricultural Experiment Station, the Connecticut Forest and Park Association, and the Northeastern Forest Experiment Station of the U. S. Forest Service.

The trees were felled and bucked into 4-foot lengths with bow saws; then the bolts were stacked in 2-cord piles. Before the wood could be loaded into boxcars it had to be yarded to landings, loaded on a truck, and hauled to the railroad siding.

Figure 1.--Aspen grove before cutting.

Two French-Canadian pulpwood cutters contracted with Connwood, Inc.,[2/] to do the job. They came from the vicinity of Berlin, N. H., and brought with them a ripe experience in harvesting pulpwood in northern New England. Their methods have stood the test of many years in the New Hampshire woods.

Their equipment was also time-tested. They brought with them 2-cord drays with pivoted front bobs and wooden runners (fig. 2); these looked very much out of place beside the conventional 1-cord rigid-frame Connecticut sleds.

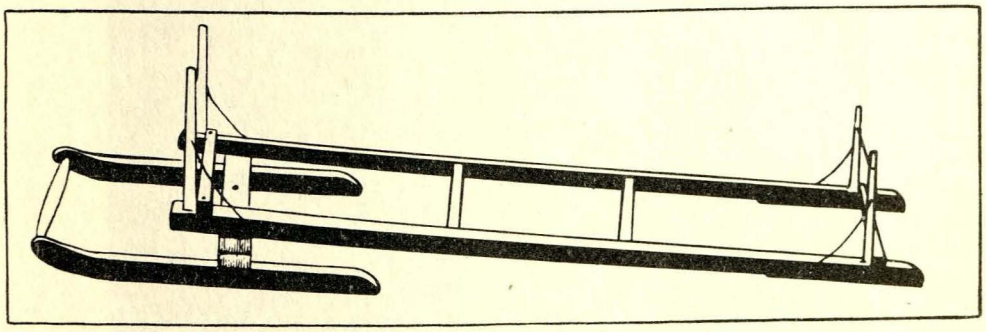

Figure 2.--Dray for "bobbing" 4-foot wood.

[2/] Connwood, Inc., is a nonprofit forest products marketing corporation.

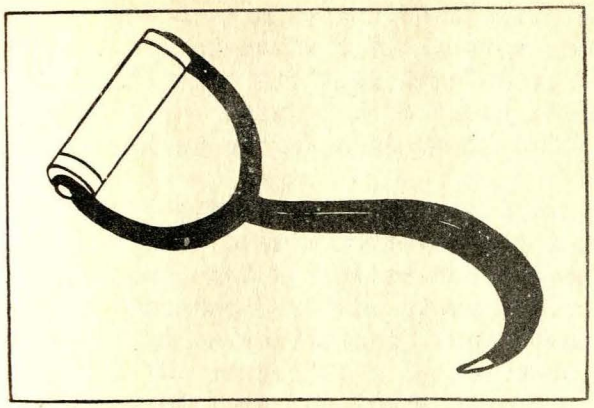

Figure 3.--Pulp hook.

Their use of the pulp hook was also an innovation in Connecticut. This simple tool was of the ordinary commercial pattern except that the curved point had been straightened out a little so that the men could drive the hook into a stick without bruising their knuckles.

The motor equipment that they used consisted of a 15-hp. crawler-type tractor and a 1½-ton Ford truck. Both of these machines proved to be somewhat light for the job but they were made to serve.

In handling the wood these men bent over as little as possible. They took every opportunity to keep the bolts at knee height or higher. While loading the drays, the tractor driver stood on the load as long as the pile on the ground was over 2½ feet high; but when the level of the pile dropped below that point he stepped down and loaded from the ground.

The yarding of the 4-foot bolts was handled by one of the partners, with the tractor and drays. Usually he loaded the drays alone. The other partner (the truck driver) and his helper trans-

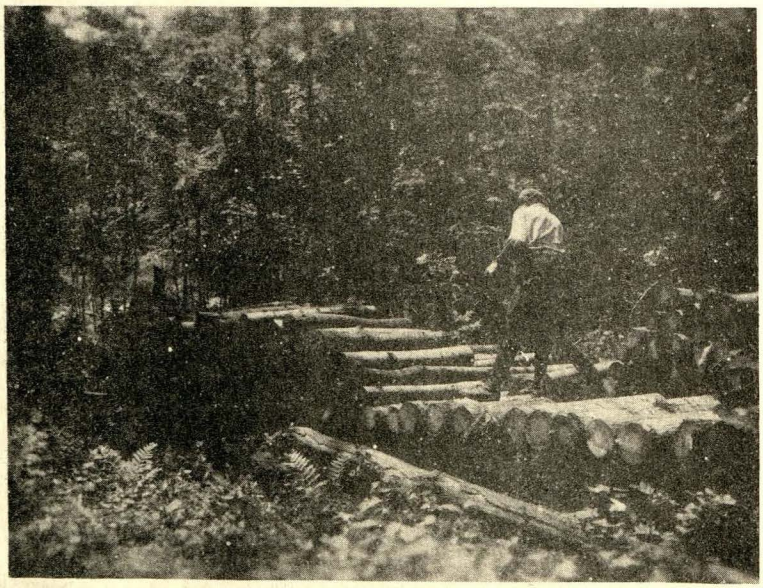

Figure 4.--Loading the 4-foot bolts on the dray.

ferred the drayloads to the truck. Since the average drayload contained 1.82 cords and the average truckload 3.02 cords, the truck could not carry two full drayloads. An average of 0.62 cords had to be dumped on the ground to empty both drays. This overflow usually was picked up on the next truckload.

The average distance of truck haul was 4.3 miles. Of this, 0.8 miles was over unimproved woods roads, 0.6 miles was on improved gravel road, and 2.9 miles was on paved highway. The railroad siding was so situated that the truck could be pulled up alongside the boxcars and unloaded directly into them. Since the truckload was composed of two rows of the 4-foot wood, the driver found it more efficient to turn the truck around after the row nearest the boxcar had been removed.

Each step in the operation, from woods to railroad car, was timed until the number of man-minutes per cord was determined with reasonable consistency for each phase of the operation. This necessitated the timing of (1) yarding 18 drayloads (32.84 cords), (2) transferring 20 drayloads (36.18 cords) to the truck, (2) five round trips of the truck between the landings and the railroad siding (651.45 cord-miles), and (4) loading nine truckloads (27.00 cords) into boxcars. The number of sticks per cord consistently averaged 116.

The time studies showed the following labor expenditure in man-minutes per cord on the various phases of the yarding and hauling operations:

	Yarding	Hauling	Loading on R.R. cars	Total
Travel time	8	34	--	42
Loading time	12	14	18	44
Contributory time[3/]	3	2	2	7
Total	23	50	20	93

This same information is shown graphically in figure 5.

3/ Includes time consumed in hitching and unhitching the tractor and time out for an occasional smoke or drink of water.

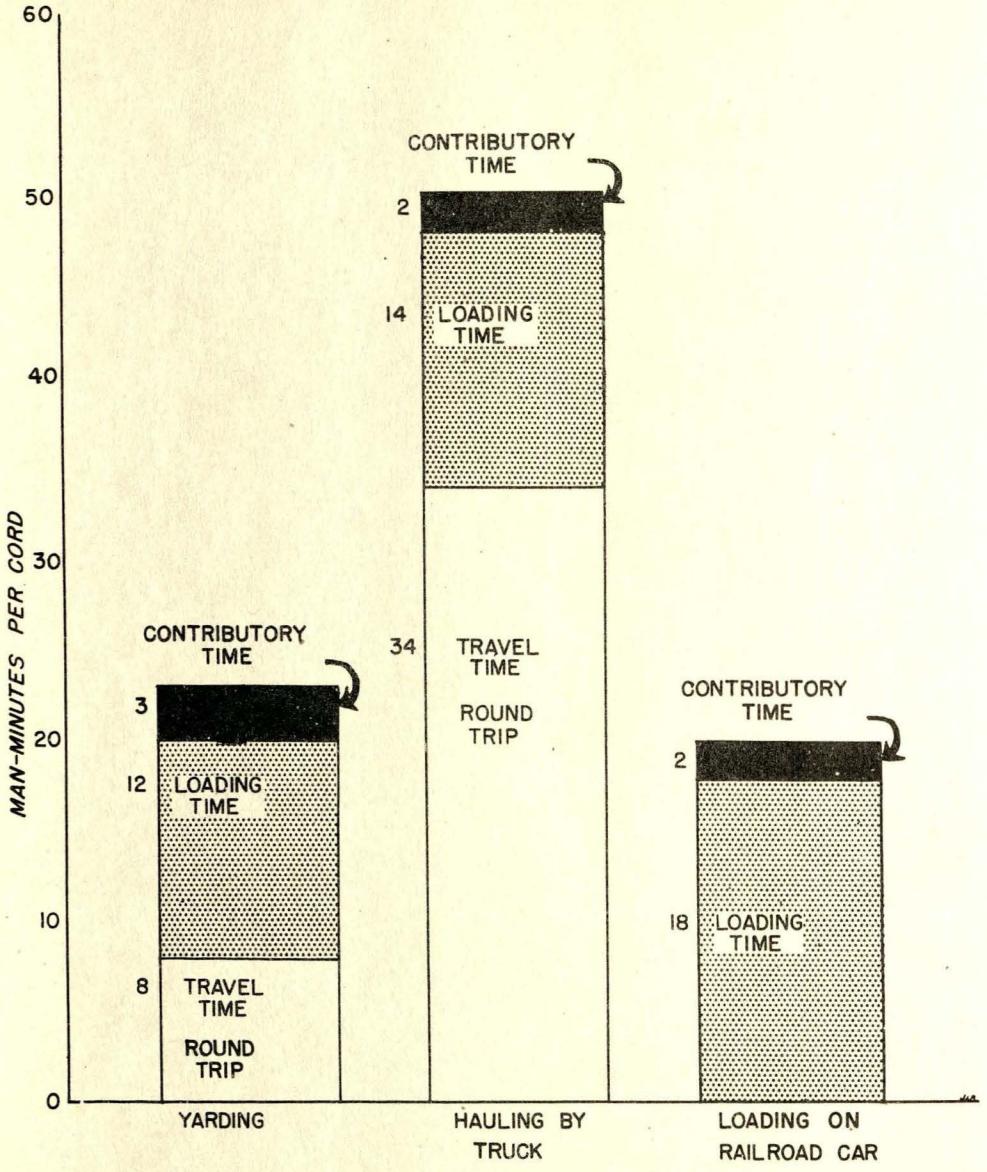

Figure 5.--Time consumed in transferring 4-foot aspen pulpwood from piles in the woods to railroad cars.